

Application No. 09/626,566
Filed: July 27, 2000
Group Art Unit: 1651

AMENDMENTS TO THE SPECIFICATION

1. Please amend the Abstract as follows:

A chemiluminescent substrate of hydrolytic enzyme having the following general Formula I, as follows:

Lumi-M-P

Formula I

where "Lumi" is a chemiluminescent moiety capable of producing light (a) by itself, (b) with MP attached and (c) with M attached. Examples of Lumi includes, ~~but is not limited to,~~ chemiluminescent acridinium compounds (e.g., acridinium esters, acridinium carboxyamides, acridinium thioesters and acridinium oxime esters), benzacridinium compounds, quinolinium compounds, isoquinolinium compounds, phenanthridinium compounds, and lucigenin compounds, ~~or the reduced (e.g., acridans) or non-N-alkylated forms (e.g., acridines) of the above,~~ spiroacridan compounds, luminol compounds and isoluminol compounds ~~and the like.~~ M is a multivalent heteroatom having at least one lone pair of electrons selected from oxygen, nitrogen and sulfur, directly attached to the light emitting moiety of Lumi at one end and to P at the other end. ~~(When M alone is attached to Lumi to form Lumi-M, it does, of course, have either a proton or a counterion associated with it or is in the form of an ion.)~~ P is a group that can be readily removed by hydrolytic enzymes, as discussed in more detail hereinafter. The light emitting moiety of Lumi is well known. For example, when Lumi is an

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~~acridinium compound or luminal, the light emitting moiety is the acridinium nucleus or phthaleyl moiety, respectively.~~

An enzymatic reaction utilizing the above compound is the following having the following general reaction A, as follows:



where HE is a hydrolytic enzyme, such as phosphatase, glycosidase, peptidase, protease, esterase, sulfatase and guanidinebenzoatease. Lumi-M-P is a chemiluminescent substrate of a hydrolytic enzyme. Lumi-M is a chemiluminescent product having physical and/or chemical properties different from those of Lumi-M-P. Said physical and/or chemical properties include emission wavelength, quantum yield, light emission kinetics, fundamental net charge distribution, dipole moment, π -bond orders, free energy, or apparent hydrophobicity/hydrophilicity, solubility, affinity and other properties.